

## CLAIMS

1) A method for modelling fluid flows in a fractured multilayer porous medium in order to simulate interactions between pressure and flow rate variations in a well running across said medium, characterized in that the fractured medium is discretized by means of a mesh pattern wherein the fracture meshes are centred on nodes at the various fracture intersections, each node being associated with a matrix volume, and flows are determined between each fracture mesh and the associated matrix volume in a pseudosteady state.

2) A method as claimed in claim 1, characterized in that the matrix volume associated with each fracture mesh is delimited in each layer by all of the points that are closer to the corresponding node than to neighbouring nodes.

3) A method as claimed in claim 2, characterized in that each fractured layer is discretized in pixels and the matrix volume associated with each fracture mesh is delimited by determining the distance from each pixel to the closest fracture mesh.

4) A method as claimed in <sup>claim 1</sup> ~~any one of the previous claims~~, characterized in that the transmissivity value is determined for each fracture mesh - matrix block pair by considering that the pressure varies linearly as a function of the distance from the point considered to the fracture mesh associated with the block.

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